

## SMART CARD TRANSACTIONS USING WIRELESS TELECOMMUNICATIONS NETWORK

### ABSTRACT OF THE DISCLOSURE

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A smart card transaction allows a consumer to load value onto a smart card and to make purchases using a smart card with a mobile telephone handset over the telecommunications network. For loading, the system includes: a mobile telephone handset including a card reader; a gateway computer; a funds issuer computer; and an authentication computer. The mobile telephone handset receives a request from a user to load a value onto the smart card. The handset generates a funds request message which includes the value and sends the funds request message to a funds issuer computer. The funds issuer computer debits an account associated with the user. Next, the handset generates a load request message with a cryptographic signature and sends the load request message to an authentication computer which authenticates the smart card. The handset receives a response message which includes a cryptographic signature and an approval to load. Finally, the handset validates the second cryptographic signature and loads the value onto the smart card. For payment, the system includes a merchant server and a payment server. First, the handset sends an order request message to the merchant server computer, and in return receives a purchase instruction message. The handset processes the purchase instruction message locally, and then sends a draw request message to a payment server computer. The payment server computer sends a debit message which includes a cryptographic signature and an approval to debit the smart card. Finally, the handset validates the cryptographic signature and debits the smart card.